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Strategic Plan

NSWC
Naval Surface Warfare Center
DAHLGREN DIVISION

January 1993

Naval Surface Warfare Center Dahlgren Division
Dahlgren, Virginia 22448-5000

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FOREWORD

On 2 January 1992, two former Navy Research and Development (R&D) Centers – the Naval Surface Warfare Center and the Naval Coastal Systems Center – merged to become the Naval Surface Warfare Center Dahlgren Division (NSWCDD). At the time of this merger, both Centers were involved, in varying degrees, with strategic planning efforts. As a result, we decided that these separate efforts should be combined to produce a Division Strategic Plan. This plan consists of a set of strategic goals and accompanying tactical objectives that are keyed to the Division's assigned mission areas. Collectively, these may be viewed as strategic opportunities for the Division to pursue as we move forward.

The context in which this planning effort has occurred embraces a rapidly changing world order that is redefining U.S. national security interests. And while future U.S. defense needs cannot be clearly defined in this changing environment, they certainly will have to be met with less money and fewer people. Therefore, the Navy, and NSWCDD, for its part, must also find a more effective and cost efficient way of doing business. The challenge is to fashion an approach for accommodating this mandated change in a way that preserves our existing ability to successfully develop, field, and support the complex systems needed to conduct modern naval warfare, while minimizing disruption to on-going fleet support and development efforts. The Division can meet this challenge.

As we move forward in this dynamic period, certain fundamental precepts should guide the future direction of the Division. These underlying precepts are as follows:

- We see ourselves retaining our long-standing mission as the Navy's primary R&D activity for surface ship combat systems, strategic systems, mines, mine countermeasures, amphibious warfare, special warfare, diving, and ordnance. These areas of endeavor will remain essential to the continuing ability of the Navy to carry out its overall mission.

- Working with the other Divisions of the Center, we expect to maintain critical technical expertise in all areas of acquisition and support, but particularly in the R&D phase, which will be our primary focus. We believe this broadly based connectivity will enable us to:

  - Retain an essential capability to understand fleet operational requirements

  - Translate these requirements into systems concepts

  - Develop, engineer, and integrate these concepts into fielded weapon and warfare systems

  This totality of experience provides the feedback and synergism of effort that will continue to ensure the success of our systems engineering approach to our work.

- During previous cycles of strategic planning, we found ourselves largely resource constrained in the pursuit of strategic goals supportive of Navy needs. The future, however, clearly portends an era of budget-constrained choices for the Navy. These choices will directly affect the scope of work that we may pursue, the resources available to do our work, and indeed, our ultimate size. Therefore, in the face of this uncertainty, we should responsibly maintain our broad scope and type of work and aggressively pursue work in all areas, particularly in science and technology and systems concept formulation and its underpinnings in naval warfare analysis.

- In the current environment, as stated above, significant emphasis is on achieving efficiencies and economies of operation through consolidation of overhead and support functions. These operations will also be targeted for improved effectiveness in delivering quality services and products to our customers and stakeholders. To this end, applying the principles of continuous process improvement will help sustain our expectations for quality in support services, as well as in our scientific and engineering work, with reduced financial and human resources. In addition, we must adopt a truly corporate view of our needs, our wants, and what we can afford. Tradeoffs will be made in light of our priority commitment to retaining and recognizing the needs of our valuable human resources. People are the foundation to accomplishing our mission.

In summary, we have developed a vision of our future, guiding principles, and core objectives—and a number of strategic opportunities to support this vision. These are outlined in the following plan. We understand that the guidance embodied in these aspects is less specific than from previous strategic planning cycles; the vagueness results from the degree of our uncertain future. Nevertheless, we do feel this guidance will sufficiently communicate to our employees and our partners in industry the broad areas of science and technology and systems work anticipated for the future. Looking to the future with optimism, we feel certain that this guidance will challenge employees of this Division to develop a wide variety of new thrusts in the eight principal mission areas and that it will serve as a useful basis for the Division's follow-on tactical planning.

T.A. CLARE
Executive Director

N.S. SCOTT
Captain, USN
Commander

A VISION FOR THE DAHLGREN DIVISION

MISSION

Provide research, development, test and evaluation, engineering, and fleet support for surface warfare systems, surface ship combat systems, ordnance, mines, amphibious warfare systems, mine countermeasures, special warfare systems, and strategic systems.

GUIDING PRINCIPLES

We exist to:

- Provide our customers with quality products and services, and
- Provide the Navy with a sound technical basis to obtain systems, equipments, computer programs, and documentation required by the fleet

We will balance the following means to achieve this end:

- Be responsive to customers' current needs and tasks, and
- Anticipate and prepare to be responsive to the Navy's needs for the future

VISION

In the future, our Nation will expect from the Navy:

- Greater emphasis and evolving roles for surface, strategic, amphibious, mine and special warfare systems
- Little to no losses during battle
- Affordable systems that can operate jointly and are capable of affordably evolving over time via demonstrated new technologies

As part of the Naval Surface Warfare Center, the Dahlgren Division will:

- Complement and support other Divisions, helping to support the Naval Surface Warfare Center's Vision "...be recognized...as an integrated Warfare Center..."
- Focus on R&D and modernization of systems and components in surface, strategic, amphibious, mine and special warfare, and diving
- Foster a team environment with other Divisions, Navy and DOD institutions, and industry to meet Navy needs in a joint forces environment
- Conceive, develop, and use technology

We will contribute:

- The benefits of combining both scientific and engineering skills
- A systems perspective, making the whole greater than the sum of the parts
- Products and services built on a solid foundation of science and technology, evaluated against current and future needs
- Innovation in our approaches and solutions to Navy needs, helping to achieve the Navy's vision "...to create a climate that fosters innovation and invention..."
- Effective use of unique facilities and dedicated business management resources to provide quality products and services, while maintaining our commitment to environment and safety

CORE OBJECTIVES

We will:

- Provide challenging work and appropriate facilities and equipment
- Create a climate that
  - Encourages self-development through experience, training, and education
  - Values and respects each individual
  - Empowers people to express themselves and take action
- Be an institution widely known for technical competence and integrity, providing quality products and services within budget and schedule
- Build on and exploit a solid foundation in science and technology in conceiving, developing, and modernizing systems for the fleet and joint forces
- Continuously improve all processes
- Keep affordability and cost effectiveness in the forefront of our operations, in our development, and use of science and technology to meet Navy needs

Surface Warfare

Surface Ship Combat Systems

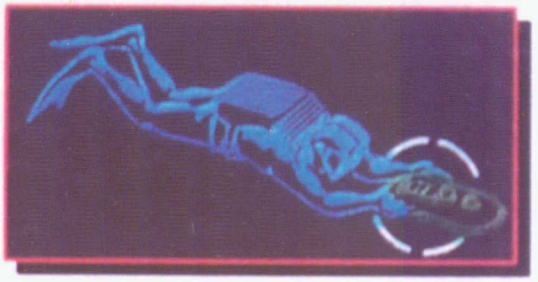
Amphibious Warfare Systems

Mine Countermeasures

Mines

Ordnance

Special Warfare Systems



Strategic Systems

CYCLE IV STRATEGIC OPPORTUNITIES

SURFACE WARFARE AND COMBAT SYSTEMS

STRATEGIC GOAL	TACTICAL OBJECTIVES	WARFARE FOCUS AREA
Be a leader in active and passive sensing for surface combatants	• Direct sensing resources to self-defense, especially Antiship Cruise Missiles (ASCMs) and environmental conditions • Emphasize force-level sensing • Technology initiatives should address sensors for multiple uses and integration of diverse sensors	Antiair Warfare (AAW), Self-Defense
Lead the development of warfare control systems for all warfare areas	• Emphasize decision aids and automated processes for quick-reaction self-defense; expanded capabilities to engage mobile land targets, mine avoidance, amphibious fire support, Antisubmarine Warfare (ASW), antitactical ballistic missile defense	Strike, Amphibious Warfare (AMW), ASW, AAW
Lead the development of hard kill and soft kill combat weapons for use across the entire battle time line	• Emphasize Shipboard Electronics Warfare (SEW) to provide systems engineering perspective for Electronic Warfare (EW) weapons • Emphasize advanced concepts and enabling technologies for future missile systems	Self-Defense, Area Defense, SEW
Play supporting role in the development of sensing information, coordination techniques, and systems	• Develop means to task sensing resources to acquire needed information • Work in needed areas of systems engineering, databases, and information processing	All Warfare Areas
Have major thrust in the general area of command support, including capability to define tactical objectives and to supervise operations	• Emphasize requirements definition and testing of concepts for force-level and joint operations	All Warfare Areas, especially Strike
Support development of System Readiness Coordination (SRC) systems, emphasize SRC requirements and concepts, embedded training functions should receive special attention	• Develop methods and equipment to assess elements status and evaluate operational readiness of the combat system to fight • Provide integrated assessment of the combat system readiness and an embedded training capability	All Warfare Areas

SURFACE WARFARE AND COMBAT SYSTEMS (CONTINUED)

STRATEGIC GOAL	TACTICAL OBJECTIVES	WARFARE FOCUS AREA
Strengthen capability to perform concept generation and evaluation at the force level and for surface ships	• Perform top-level systems engineering and analysis • Strengthen warfare analysis capability	All Warfare Areas
Lead the development of combat systems for all combatants and noncombatants and lead emerging ship self-defense initiatives	• Design and develop future combat systems	All Warfare Areas
Enhance position as leader in combat systems technology	• Provide leadership for developing new combat system concept • Strengthen focus in Systems Research and Technology	All Warfare Areas
Enhance position as leader in protection systems and ship self-defense	• Promote and become the block manager for a 6.2 program for E^3 • Achieve Milestone III for Ship System Design Support (SSDS) MK 0 (RAIDS) FY93 and Initial Operational Capability (IOC) in FY94 • Demonstrate a prototype of SSDS MK 1 at sea in FY93 and achieve Milestone III in FY95 • Formulate a technical and programmatic strategy for development of SSDS MK 2 and SSDS MK 3 and gain acceptance by NAVSEA-06D of NSWCDD system engineering contributions • Guide sponsor in details of MILCON process to obtain P-338 funding in FY94; achieve Beneficial Occupancy Date (BOD) in FY95 and IOC in FY96; minimize transition time between Bldg Z-41 and P-338	All Warfare Areas

STRATEGIC SYSTEMS

STRATEGIC GOAL	TACTICAL OBJECTIVES	WARFARE FOCUS AREA
Continue leadership role for Submarine Launched Ballistic Missile (SLBM) program in weapons control software development, targeting, and reentry systems design	• Provide R&D, system evaluation, and life-cycle support • Develop and retain required expertise and facilities, especially wind tunnel and advanced development laboratories	Strategic Systems
Establish leadership role in support of new programs in strategic deterrence, theater support, space control, and strategic defense; emphasize technical involvement in concept definition, and systems analysis and development	• Develop and assess options for new Navy strategic missions and concepts and for development of requirements and acquisition strategies • Become lead laboratory for development of new strategic systems • Become recognized expert and agent for strategic systems analysis and systems engineering of strategic systems	Strategic Systems
Establish leadership role for surface and strategic warfare in identifying warfare requirements derived from and related to space capabilities and threats; ensure that resulting developments are integrated into surface and subsurface platforms	• Establish leadership role in definition, development, and application of space assets for strategic and tactical weapons systems • Become technology expert for exploitation of space systems for naval warfare	Strategic Systems, SEW
Establish leadership role in science and technology for strategic systems; emphasize warfare analysis tools, computer systems, materials science, sensor and engagement systems, and aerodynamic and space vehicle design, analysis, and test	• Become focal point for strategic system computer technology initiative • Be the focus for software development methodology R&D for strategic systems in Navy and Department of Defense (DOD) • Remain Navy expert for development of advanced materials for weapons and spacecraft • Be focus for Navy development and wind tunnel validation of computational fluid dynamics • Regain leadership in performing basic and applied research in the areas of mathematics and physics	Strategic Systems

ORDNANCE SYSTEMS

STRATEGIC GOAL	TACTICAL OBJECTIVES	WARFARE FOCUS AREA
Continue leadership role and Center of Excellence in the conceptualization and development of ordnance systems	• Maintain full-spectrum involvement in ordnance systems • Emphasize basic research, exploratory development, and prototyping	Energetic Materials, Gun Weapons Systems, Surface Launched Weapons, Underwater Warheads, Marine Corps Weapons, Space Weapons

MINE WARFARE

STRATEGIC GOAL	TACTICAL OBJECTIVES	WARFARE FOCUS AREA
Retain leadership in the development of mine systems and related technology	• Develop mines and delivery equipment that are affordable, remotely commandable, and use delivery assets efficiently • Extend capability of current systems through use of advanced technology	Mine Warfare

MINE COUNTERMEASURES

STRATEGIC GOAL	TACTICAL OBJECTIVES	WARFARE FOCUS AREA
Enhance position as the leader for development of mine detection, avoidance, neutralization and sweeping systems and tactics to meet the current and future fleet operational needs for all Mine Countermeasures (MCM) missions	• Emphasize rapid technology prototyping to provide near-term capabilities for MCM in shallow water, very shallow water, and the surf zone, focusing on remote and standoff systems • Demonstrate MCM applications of high payoff technologies, such as superconducting electromagnetic (EM), electro-optics, and sonar • Lead development of advanced MCM systems, such as in-stride mine neutralization for surface ship and submarine self-protection • Develop an organic MCM capability to protect ships and craft prior to an amphibious assault • Increase the use of warfare analysis for developing systems and tactics for surface and airborne MCM operations and training	MCM, Heavy Sealift, Choke Points, Ship Survivability

AMPHIBIOUS WARFARE

STRATEGIC GOAL	TACTICAL OBJECTIVES	WARFARE FOCUS AREA
Lead development of advanced technology applications for amphibious warfare operational needs, particularly in ship-to-shore movement, ship/craft interface, landmine countermeasures, and the use of merchant ships to augment naval sealift	• Maintain an integrated program of warfare analysis and full spectrum RDT&E • Emphasize rapid technology prototyping to eliminate the landmine threat and to expand the over-the-beach offload envelope • Establish and lead a program to use merchant ships for augmenting naval sealift • Promote and become the block manager for a 6.2 program for amphibious systems • Enhance capabilities to provide amphibious warfare-unique C^3N functions • Expand applications of air cushion vehicle technology to MCM and other coastal missions	AMW, Heavy Sealift

SPECIAL WARFARE

STRATEGIC GOAL	TACTICAL OBJECTIVES	WARFARE FOCUS AREA
Enhance position as the Lead Naval Special Warfare R&D activity by becoming the lead activity for all maritime Special Operations Forces (SOF)	• Coordinate the design, development, and system integration of all Naval Special Warfare programs • Emphasize rapid response engineering support to all maritime SOF • Apply advanced technology for force delivery platforms to reduce detectability and reduce operator workload • Support joint development of diving technology to improve life support for maritime SOF • Design and develop advanced C^3I systems to reduce detectability and improve mission performance • Enhance capabilities to recon/detect and neutralize mines and obstacles in shallow water, very shallow water, and surf zone • Become the leader for developing nonattributable and standoff weapons and other specialized mission support equipment	Seal Operations, AMW, MCM, Army and Air Force Maritime SOF

DIVING AND SALVAGE

STRATEGIC GOAL	TACTICAL OBJECTIVES	WARFARE FOCUS AREA
Lead development of life support and diving and salvage technology, emphasizing applications to critical warfare areas, cost beneficial enhancements, and expanded support for other armed services and agencies	• Emphasize applications of diving life-support and mission-support technology to solve the critical needs in Special Warfare diving, Explosive Ordnance Disposal (EOD) diving, and other critical missions such as MCM • Become the national center for developing manned life-support protection against hostile marine environments • Develop systems to satisfy fleet diving needs for ship and cargo salvage; clearance of harbors and shipping lanes; and the repair, construction, and maintenance of underwater installations • Lead the development of precise underwater navigation and object location/identification equipment, emphasizing applications to EOD needs for the detection, classification, and disposal of underwater ordnance • Improve the work capability of divers to equal or better than the same person on land • Design and develop work systems to reduce maintenance costs of ships and submarines; for example, systems to extend the period for dry-docking from 3 to 10 years	Seal Operations, Ship Survivability/Rescue, Explosive Ordnance Disposal

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